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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,562	03/23/2001	Joseph P. Odenwalder	010208	7117
23696	7590	06/02/2005	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			WANG, TED M	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,562

Applicant(s)

ODENWALDER ET AL.

Examiner

Ted M. Wang

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 4-6 is/are allowed.
- 6) ☒ Claim(s) 7-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/23/2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The indicated allowability of claims 7 – 10, and 12-15 are withdrawn in view of the newly discovered reference(s) to US 2002/0105929, US 5,537,430, and US 6,185,199. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 7, 10, 13, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (US 2002/0105929).

□ With regard claim 7, Chen et al. discloses an apparatus comprising:

a **block encoder** configured to receive a symbol and to output a plurality of symbols (Fig.1C element 830, Fig.1D element 860, and column paragraphs 83 and 84); a **repetition** element configured to receive the plurality of **symbols from the block encoder** and to output a sequence, wherein the sequence comprises a repeated pattern of the plurality of **symbols** (Fig.1C element 832 and column paragraphs 83); a **modulation** element configured to receive the sequence

(Fig.1C element 834 and column paragraphs 83) and to output an in-phase component and a quadrature component (Fig.1C element 834 output); and a Walsh covering element for spreading the in-phase component and the quadrature component (Fig.1C element 836 and column paragraphs 83); wherein the Walsh covering element uses at least a 256-ary Walsh code (Fig.11 element 462 and paragraphs 134, 141, and 143).

- With regard claim 10, Chen et al. further discloses wherein the modulation element performs quadrature phase-shift keying (QPSK) modulation (Fig.1C element 834 and paragraph 83).
- With regard claim 13, which is an apparatus claim for generating a preamble for transmission on a channel related to claim 7, all limitation is contained in claim 7. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 15, which is an apparatus claim for generating a preamble for transmission on a channel related to claim 10, all limitation is contained in claim 10. The explanation of all the limitation is already addressed in the above paragraph.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Art Unit: 2634

Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2002/0105929) in view of Park et al. (US 5,537,430).

- With regard claims 8 and 9, Chen et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching wherein the symbol comprises two bits and the block encoder outputs three code symbols for the two-bit symbol.

However, Park et al. teaches a convolutional encoder with 2/3 code rate that output 3-bits symbol by adding a redundant bit to 2-bit input data (Fig.3 elements 202 and 210, and column 3 lines 13-45) that meet the limitation of claim 8 and 9 as described in the above paragraph.

It is desirable that the symbol comprises two bits and the block encoder outputs three code symbols for the two-bit symbol in order to reduce the overhead and bandwidth expansion. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the apparatus as taught by Park et al. in which, the symbol comprises two bits and the block encoder outputs three code symbols for the two-bit symbol, into Chens' encoder circuit so as to reduce the overhead and bandwidth expansion.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2002/0105929).

- With regard claim 12, Chen et al. further discloses an apparatus comprising:

Art Unit: 2634

a mapping element configured to receive one bit and to output +1, -1, or 0 accordingly (Fig.1E elements 880, and 890, and paragraph 85);
a repetition element configured to repeat the output of the mapping element to form a sequence (Fig.1E elements 884, 892, and paragraph 85); and
a Walsh covering element for spreading the sequence (Fig.1E elements 884, 882, and paragraph 85).

Chen et al. discloses the claim invention except for processing walsh cover immediately after the mapped sequence then conducting the sequence repetition processing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to conduct the sequence repetition processing first then conduct walsh cover processing immediately after the sequence repetition processing, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Jakikes, 86 USPQ 70.

In addition, in Fig.1C elements 832 and 836 (Fig.1D elements 868 and 872) of the Chens' reference clearly discloses that a signal is performed by the sequence repetition processing first and then conduct the walsh cover processing right after.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 2002/0105929) in view of Zehavi (US 6,185,199).

- With regard claim 10, Chen et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching wherein the convolutional encoder is a tail-biting convolution encoder.

However, Zehavi teaches that the convolutional encoder is a tail-biting convolution encoder (Fig.2 element 22, and column 6 lines 41-53).

It is desirable the convolutional encoder is a tail-biting convolution encoder in order to improve the bit error rate. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the apparatus as taught by Zehavi in which, the convolutional encoder is a tail-biting convolution encoder, into Chens' encoder circuit so as to improve the bit error rate.

Allowable Subject Matter

8. Claims 1, and 4-6 are allowed.

Conclusion

9. Reference(s) US 20020138721 is cited because they are put pertinent to the transmitter with separated preamble channels. However, none of references teach detailed connection as recited in claim.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang
Examiner
Art Unit 2634

Ted M. Wang



SHUWANG LIU
PRIMARY EXAMINER